

Some Records of Bees.—Some time ago I received a number of bees from the Queensland Museum, without any information as to collectors. Dr. J. Bequaert, to whom I mentioned the matter, at once recognized from the localities the source of the collection. It was sent out by E. Le Moulton of Paris, who is at present advertising insects for sale in American entomological journals. Dr. Bequaert showed me a series of similar insects, from the same source, in his possession. As many collectors doubtless possess materials from Le Moulton, and as the locality records are new, it may be worth while to record the following. We are still without information as to the actual collectors.

1. Guyand, Maroni. *Acanthopus splendidus* Fabr., *Agla cærulea* Lep., *Exarctia frontalis* Guér., *Oxæa festiva* Smith, *Bombus incarum* Franklin, *Centris obsoleta* Lep., *C. americana* Klug, *Epicharis conica* Smith, *E. schrottkyi* Friese, *E. affinis* Smith, *Ceratina lata* Spinola, *Eulæma dimidata* L., *E. fasciata* Lep., *E. Mocsaryi* Friese, *E. smaragdina mexicana* Mocs., *Euglossa piliventris* Guér.

2. Tunis. *Melecta luctuosa meridionalis* Gribodo, *Osmia ferruginca* Latr.

3. Ras-el-ma, Algeria. *Andrena albopunctata* Rossi, *Anthidium siculum* Spinola, *A. manicatum barbarum* Lep.

4. Dimbroko, French W. Africa. *Crocisa excisa* Friese.

5. N. Djole, Gabon. *Megachile tricolor* Friese.

For other species see Ent. News, 1916, p. 461, and Can. Ent., 1916, p. 406.—T. D. A. COCKERELL.

PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.

MEETING OF FEBRUARY 6.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., February 6, 1917, in the American Museum of Natural History. In the absence of the President, Mr. George W. J. Angell acted as chairman, with 21 members and one visitor present.

Prof. Edwin E. Calder, 4 Market Sq., Providence, R. I., was elected an active member.

Mr. Bird read a paper, "A New *Papaipema* from the Prairies," illustrated

by numerous specimens of adult, larva, pupa and drawings of genitalia, giving the story of his finding the larvæ boring in the root of a plant locally called rattlesnake weed. The species is to be called *Papaipema eryngii*.

Mr. Dow read a paper, "The Plague of the Lice and the Plague of the Flies," in which the passages of the Scriptures dealing therewith were carefully considered and compared with the various commentaries.

Mr. Nicolay exhibited his collection of the genus *Buprestis* and spoke of the differences and geographical distribution of the species *striata* and *impedita*.

Mr. Davis exhibited part of his *Cicada* collection, showing the new species, *Okanagana aurantiaca* and *Clidophleps astigma*, and some allied species, explaining the differences between them. He also read a card from E. B. Williamson.

Mr. Clark spoke of the irregularity of the seasons by which, for instance, *Catocala tristis* became less rare this year, while *C. cara*, usually common, was seldom found; and of the excellent results in catching Lepidoptera, Coleoptera and Diptera with his trap lantern, consisting of a 100-watt lamp kept burning all night, with two openings into the room, one 3 ft. \times 4½ ft. the other smaller.

A general discussion followed in which Mr. Davis told of having caught *Catocala tristis* at Yaphank, Mr. Bird described the sugar trap he has used with success and various receipts for making sugar mixture were given by Messrs. Clark, Dow, Davis and Richardson, all agreeing that good molasses, not corn syrup, was necessary and a small quantity of fusel oil, ethyl alcohol, amyl acetate or asafœtida, beneficial. Mr. Richardson gave some data from his experiments in attracting house flies, indicating that about 4 per cent, ethyl alcohol was very good, but 10 per cent. a decided repellent. A discussion of baited jars as traps for beetles followed by which it appeared that the same sugar mixture worked well, though disappointing at times, and that other substances, condensed milk, fish, etc., had also been used successfully; Mr. Davis pointed out that molasses had the advantage of preserving the specimens to some extent.

Mr. Dow closed the discussion with an account of the experiences he and Mr. Engelhardt had at Claremont, N. H., under new arclights, particularly in connection with a toad that lived under a nearby stoop by day and came nightly to feast upon the insects. He averred that this toad became tame enough to eat out of his hand, and would accomplish the eating of a *Polyphemus* moth by holding it with one foot while he folded the wings with the other to reduce its spread.

MEETING OF FEBRUARY 20.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., February 20, 1917, in the American Museum of Natural History, President Harry G. Barber in the chair, with 22 members present.

Miss Louise Joutel was elected an active member on nomination by Mr. Davis, the by-laws being suspended to permit of immediate action.

A picture of Mrs. Heidemann was presented by Mr. Weiss and a photograph of her late husband, Otto Heidemann, was shown by Mr. Davis.

The death of Bertil Robert Poppius on November 27 last was noted by the President. He was a Finnish author who had contributed largely to knowledge of Hemiptera and Arctic Carabidæ.

A letter from our member, S. G. Rich, now in South Africa, was shown by Mr. Davis.

Mr. Harris read a paper on "Some White Mountain *Cicindela*" and exhibited his collection of *C. ancocisconensis*; in connection therewith he showed a facsimile of the "Family Visitor" in which appeared the original description and discussed the names *dowiana*, *eriensis* and *carolina* proposed by Casey for the forms occurring at other than the type locality, showing that in his long series, the characters assigned to the first two were not constant. He gave also the origin of the specific name, derived from Capt. John Smith's early name for the White Mts., and several facts indicating that the burrows of some species of *Cicindela* are in situations inundated at certain seasons.

The paper was discussed by several members. Mr. Davis spoke of the series of *C. carolina* collected by Messrs. Brinley and Frank Sherman as indicating no greater differentiation than that exhibited by series of *eriensis* and *dowiana*; and of his finding *C. marginipennis* on islands in the Delaware River at Callicoon, where the river overflowed the locality in spring.

The President questioned the validity of the publication of the description of *C. ancocisconensis* in the newspaper "Family Visitor," stating that Van Duzee in cataloging Hemiptera rejected newspaper publications as invalid. (See section 13, page 6, The Entomological Code, by Banks & Caudell.) This question was discussed by several members, Mr. Sherman pointing out that the strict application of the rule would invalidate many early published names.

Mr. Sherman exhibited a photograph made for him by the Chicago Library, of Wm. Couper's list of Coleoptera found in the Province of Quebec, published in the rare "Canadian Sportsman and Naturalist"; also an early price list of Texan Coleoptera published by Belfrage in the "Psyche" Advertiser. Mr. Mutchler mentioned that the first named was in A. M. N. H. Library.

Mr. Dickerson read a paper "Notes on *Leptobyrsa rhododendri*," which was discussed by Dr. Forbes, Messrs. Barber, Engelhardt and Bird, the latter stating that in his experience the best control was attained by a spray of concentrated tobacco solution mixed with whale-oil soap.

Mr. J. W. Angell brought up the question of the color of *Cicindela 6-guttata* turning blue with age. Mr. Davis said he had found dead specimens under bark that were blue and Mr. Harris said very old cabinet specimens, fifty years old perhaps, might turn.

Mr. Dow gave his experience in mixing poisons with sugar mixtures:
 Cyanide by its odor acted as a repellent,
 Calomel produced no result,
 Amyl acetate increased attraction but failed to kill,
 Arsenates produced no result,
 Strychnine acted as a repellent,
 Sugar of lead was attractive but failed to kill,
 Carbon disulphide attracted turkey buzzards and Silphidæ.

In the case of termites a sponge soaked with syrup and calomel proved attractive and deadly.

MEETING OF MARCH 6.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., March 6, 1917, in the American Museum of Natural History, Pres. Harry G. Barber in the chair, with 25 members present.

The Curator announced a meeting of coleopterists on Saturday, March 10, subject Coccinellidæ.

The Editor reported on some of the interesting papers to appear in the next number of the JOURNAL, especially one on food habits of *Corixa*.

Dr. Lutz presented a photograph of the late C. H. Roberts, taken on probably his last collecting trip at Ramsey.

The President called attention to a circular of Index of Literature of Economic Entomology that had been received by Mr. Dickerson.

Mr. Davis read a letter from Dr. Raymond C. Osburn announcing his removal on July 1 to Columbus, Ohio, to become head of the department of zoölogy in the State University.

Mr. Dow read a paper on "The Nine Grasshoppers of Israel," giving passages of Scripture with commentaries on the various translations, and his suggestions based on other ancient literature of the insects probably involved.

His remarks were discussed by Messrs. Davis, Comstock and Dr. Lutz in connection with the work already done in identifying Biblical insects, especially by Huntingdon, from modern collections in the regions involved; and by Dr. Forbes, Mr. Woodruff and others in connection with the changes in water conditions and irrigation and their entomological consequences. Mr. Woodruff recalled a visit to Palestine some years ago during a plague of locusts, when he saw the shores of the Dead Sea piled a foot deep and fifty feet wide with dead locusts, while Mr. Dow described the well at Palmyra, on the caravan route, lined throughout its 300 ft. of depth, with camel bones.

Mr. Leng exhibited the beetles caught by Mr. Davis, Mr. Knight and Professor Bradley in western New York in June, 1916, calling attention to a number of introduced European weevils and several species of Carabidæ, differing, either by reason of the more western locality or on account of the

extensive swamps, from those of the vicinity of New York City. He read a paper in which comparison was made with Dr. Wm. L. Bray's "Development of the Vegetation of New York State," in which he emphasized the necessity of considering several factors other than temperature in grouping the beetle species of the state, among which are certainly the local environment and post-glacial dispersion.

Mr. Davis exhibited a large number of insects of other orders caught on the same trip, and read the following memo.

"On June 22, 1916, the dragon flies of interest taken at Portage were *Tachopteryx thoreyi*, found on an open, sunny road instead of on a tree trunk as usual; *Libellula quadrimaculata*, *Tetragoneuria spincera*, *Zanthus parvulus* and *Aeshna umbrosa*. This last mentioned species has a long period of appearance, as it has been found on Staten Island as late in the fall as October 21.

"On June 23, on the westerly side of Conesus Lake near Long Point, the dragon fly *Tetragoneuria cynosura* with the variety *simulans* was in great abundance and many were resting on dead bushes and the dead branches of trees that were near the ground. Mr. Harry H. Knight collected 31 individuals by sweeping his net about one of the bushes on which the insects had settled. While we were looking at the dragon flies we heard the songs of numerous seventeen-year cicadas and so went up the hill to the woods. The cicadas were sufficiently numerous to keep up a continuous singing, but later they were silent when the day became cloudy. The species was expected to appear in Central New York in 1916.

"In June, 1915, the butterfly *Phyciodes batesii* was collected at Rock City, in Catteraugus County, N. Y., in considerable numbers and a single female at Portage, N. Y., on the 13th of the month. On June 22, 1916, a male was taken at Portage. It has also been taken at Ithaca, N. Y., so the species is certainly not uncommon in central and western New York."

Mr. Davis exhibited a number of photographs of the localities that had been referred to, including Indian Falls, where he found the "woods of the midday night" as he expressed it.

Mr. Comstock exhibited *Lycana sonorensis*, pinned specimens, pupa and living adult freshly emerged, saying that eastern collectors seldom could see this most beautiful California species of the genus alive.

Professor Wright described the capture of about 140 specimens by Mr. Geo. Field and himself near Pt. Loma, Cal. The butterflies to escape the strong sea breeze fly only 5 or 6 inches from ground among the shrubbery on the lee side of the ridge. The food plant is a species of Cotoledon or pencil plant of which the closely appressed leaves look like a green pencil growing out of the ground. The larvæ bore into the pencil and the pupa is found in surrounding rubbish. March is the best month to find them.

Mr. Leng spoke of the similar flight of *Lycana* in Labrador, following closely the contour of the rocky surface.

MEETING OF MARCH 20.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., March 20, 1917, in the American Museum of Natural History, President Harry G. Barber in the chair, with 24 members present.

Mr. Engelhardt under the title of "Collecting at Timber Line, Mr. Hood, Oregon," described his journey in August, 1916, through California and Oregon from Sacramento to Portland, and his ascent of Mt. Hood, illustrating his remarks by maps, photographs and specimens. These were collected partly along the margin of the Columbia River before ascending the mountain, among surroundings similar to those found in Maine and included some *Cychnus* and *Omus*, and partly near Cloud Cap Inn on Mt. Hood, at an elevation of about 4,000 feet, where there is a virgin forest preserved as a government reservation. Carabidæ were very abundant at the timber line, and when the sun shone other insects abounded on the numerous hardy flowers, like squaw weed, paint brush, lilies, hellebore, lupines, golden rod and mountain ash, the latter blooming in August at that elevation. Among the butterflies caught were *Lycæna fuliginosa*, *pheres*, *amyntula*, *antiasis*, *Chrysophanus mariposa*, *Melittia rubicunda*, *Vanessa milberti*, *Pyrameis cardui*, *Chionobas iduna* and *Argynnis rhodobe*.

Mr. Engelhardt gave a graphic account of the climb to the summit of the mountain, not without danger from crevasses, and of the exhilarating influence of the bitter cold found on the solid ice at the top upon himself and his companions. He was fortunate in having such alternations of sunshine, clouds and snowstorms as to show the mountain under many conditions; three days were spent on the mountain, affording opportunity of visiting the glaciers and forests as well as the summit.

Leaving Mt. Hood, Mr. Engelhardt went further north, visiting Seattle and San Juan Island in Friday Harbor on Puget Sound, where the University of Washington maintains a biological station. Two days were spent here, mainly devoted to marine work with a motor boat, but some moths were taken at the electric lights and *Argynnis bremmeri* and many Carabidæ by day. The island is heavily wooded and would repay further effort.

Mr. Engelhardt's remarks were discussed by Dr. Forbes, Dr. Bequaert and Messrs. Bird and Schaeffer, the discussion bringing out the record of *Vespa austriaca* on the Pacific Coast mentioned at a previous meeting by Dr. Bequaert.

Mr. Bird under the title "Some Remarks on Parasitism" gave a remarkable account of 1,732 parasites, primary and secondary, from one host, showing in detail the processes of nature by which, in spite of the number of eggs laid by the female and the influence of secondary parasites in restricting the operations of the primary, the balance is maintained, so that ordinarily one pair succeeds another. He aimed to show the possibility of following in certain endophytic species, the actual happenings in the field, of the individual through the whole larval and pupal period, by evidence deduced at the close of the cycle. He detailed in part what befell a thousand individuals

surrounded by more than a score of primary and secondary parasites, scavengers and depredators, as well as attacking mammals, bacterial and fungus diseases. He also showed the value such data would have in economic lines, in deducting to what per cent. a given parasite might be expected to control its host. His remarks were illustrated by specimens of the host and parasites and by blackboard diagrams.

Dr. Bequaert compared his experiences in "Collecting Flies on Three Continents" referring especially to his collections in Belgium, in northern Africa and at Lahaway, Lakehurst, Ramsey, N. J., and Chittenden, Vt. He said that on account of the Diptera being especially northern in distribution, the result showed a smaller number of species for New Jersey than for Belgium as was to be expected; but it also showed the presence in New Jersey of certain southern genera, unknown in Belgium, as well as the absence of some exclusively old world genera. Six boxes of specimens were shown and the illustrations, requiring use of lantern were reserved for next meeting. Dr. Bequaert spoke earnestly of the advantages of the personal contact with nature derived from field collecting in pursuing any studies in natural history.

Mr. Woodruff, after reporting his visit to Mr. Sleight's home in Paterson, where he found him still very ill and emaciated, but sanguine and looking forward to an early removal to Lake Hopatcong, exhibited *Schistocerca peregrina* the biblical "locust" described by Mr. Dow at the last meeting.

Mr. J. W. Angell exhibited some rare Lucanidæ, viz.: *Dorcus brevis* Say, found some years ago by Gustav Beyer near the roots of an old pine at Newport News, Va., in June; *Pseudolucanus placidus* Say, labeled Greenwood Lake, N. J.; *Dorcus parallelopipedus* Linn., two specimens from F. Emille, Longueuil, Canada, apparently confirming the North American record given by Nonfried; *Lucanus elaphus* var. *carlengi* Angell, now known from Texas, Kentucky, Illinois; *Necrophorus grandior* Angell and *mysticollis* Angell, new species recently described in Entomological News; *Diphyllostoma nigricollis* Fall, and *Cyclommatus imperator* Boileau, from New Guinea, the largest species of the genus.

Mr. Davis exhibited a living *Neoconocephalus triops* Linn. found by Mr. Comstock in a head of lettuce in which it had undoubtedly traveled from its home in the southern states.

The President announced the death of Dr. R. E. Call.

Dr. Bequaert exhibited a huge volume on Hymenoptera, just published in the Guide to Insects of Connecticut, with two similar European works for comparison, praising highly the Connecticut book.

Mr. Mutchler exhibited for Mr. Bird, *Megarhyssa atrata* Fabricius, in its characteristic pose ovipositing in the larval burrow of *Tremex columba*, of which it is a parasite.

MEETING OF APRIL 3.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., April 3, 1917, in the American Museum of Natural History, President Harry G. Barber in the chair, with 23 members present.

The Curator announced the final meeting of Coleopterists for the season on Saturday, April 7, at 2 P. M., subject Coccinellidæ.

Mr. Olsen showed report in daily press of Mr. E. B. Williamson's return from Columbia, S. A., with an account of his journey.

Dr. Lutz exhibited about 16,000 insects collected in Arizona and with maps and photographs illustrated his account of the journey made by Mr. J. A. G. Rehn and himself in 1916. He said in part that starting from New York, June 24, the first collecting of interest resulted from the train being stalled in a swamp in Texas about 9 P. M., so that many insects were attracted to the lights at the rear. Tucson was reached July 3 and the Santa Catalina Mts. were visited first with excellent results at the Lowell Ranger Station in spite of a temperature of 106°. On July 8 a trip was made to Mt. Lemon and later the ascent to Bear Wallow at 8,200 ft. was completed. The contrast between the temperature and vegetation at these stations was strongly marked, for the cold and the damp at the greater height caused suffering and, when the clouds obscured the sun, permitted of picking *Xylocopa* off the flowers by hand, while the vegetation changed from cactus through oak to pine.

The following approximate elevations for different regions was shown on the blackboard:

Desert slopes with mesquite and opuntia.....	2,200-2,500 ft.
Desert slopes with palo verde and giant cactus...	3,500 ft.
Desert slopes with yucca and agave.....	4,500 ft.

Canons with oak occur at 3,500 feet and beyond that elevation the oaks begin to appear also outside the canons, finally becoming abundant and mixed with trees like our eastern ones, *Piñon*, *Prunus*, *Robinia*, *Rhus*, *Solanum*, etc., at 4,000 to 6,000 feet; pines begin to appear next and become abundant at 6,500 feet; forests of fir occur at 8,500 feet. These figures would, however, vary on the different slopes and are only intended as an approximation.

The night work at the most elevated stations was unsatisfactory, but elsewhere the results of using a tent of cheesecloth about 9 feet long by 6 feet wide and 6 feet high, with a muslin floor provided with shelter strips of cheesecloth, were glorious. Both ends were commonly left open and two lanterns hung within. The outside worked like a sheet and attracted many insects, while others took shelter within or on the floor. Rains were frequent and flowers were abundant in the encinal or oak region from 4,000 to 6,000 feet elevation and particularly at Mud Springs good collections were made.

The object of the trip being largely to compare the encinal regions of isolated mountain ranges in southwest Arizona, a wagon trip, with Frank Cole for guide, was started July 24, on information as to the vegetation obtained from the Desert Laboratory. Sonoita, Black Dike, Prospect, Kitts Peak, Coyote Mts., and other localities in the Baboquivari range were visited in the following three weeks. The results were not equal to expectations owing to the stands of oak and pine being of insufficient extent, the oak associations

being in fact found southwest of Tucson, only where lack of trails make them difficult to reach, so a return to the Santa Catalina range was made for further collecting in Sycamore canon and on Mt. Bigelow. Immense congregations of *Hippodamia* were observed at the extreme top of this mountain, the beetles in masses five or six inches deep. Mr. Rehn having already started alone, the return journey was made by Dr. Lutz via San Francisco and Utah. The cost of the entire trip was somewhat less than \$1,000 and the results, as shown by the boxes of insects of all orders displayed, quite extraordinary in respect of the additions to our list of insects previously known, if at all, from Mexico. In Longhorn beetles the result seemed largely due to the persistent collecting at light; in Cicindelidæ it appeared in specimens of *C. calomicra* Bates; in Elateridæ in *Pyrophorus arizonicus* of which a description by J. A. Hyslop will shortly appear, while such rare species as *Laccophilus lateralis*, *Chrysomela rubiginosa* and *Telegeusis debilis*, identified by Mr. Mutchler, added to the interesting character of the beetles generally.

In the discussion that followed Mr. Wright spoke of the number of Mexican forms found by Mr. Watson among the butterflies Dr. Lutz had collected, and by himself among the moths, while Dr. Forbes and Mr. Davis brought out by their questions that the success was not due to an unusually wet season, it having been normal in that respect. The desert, Dr. Lutz said, was caused by an almost total absence of rain at the critical season, but rain could always be expected in July and August.

Dr. Bequaert exhibited with the lantern a large number of colored views of African collecting scenes, mentioning especially the fuel stations on the Congo River where the boats stop for wood, great numbers of wood boring beetles occurring there in the old logs and branches that accumulate, the clearings in the rain forest, and about pools and brooks, also the savannah country and grass plains of the interior. Pictures were shown of great termite nests and of the Queen cell, of the fungus gardens, army ants, ant-inhabited acacia thorns, weaver ants, *Trigona* bees in bamboo nests, and grasshoppers, the whole giving an extraordinary impression of Dr. Bequaert's familiarity with African collecting. Among the pictures an interesting series showed African dwellings in a descending scale of grandeur from the European frame houses at Boma to simple structures built entirely of leaves in the interior in front of one of which stood Herbert Lang and James Chapin.

Mr. Olsen and Dr. Forbes discussed the matter of the weaver ants and those inhabiting acacia thorns giving somewhat analogous instances.

Mr. Davis exhibited *Conomyia ferruginea* and gave some data that will appear in Miscellaneous Notes.

Mr. J. W. Angell exhibited *Plusiotis adaleide* from Mexico, also a *Sinodendron* labelled "Tex" and a *Pseudolucanus mazama* with but one mandible.

Mr. Leng called attention to an article on "Collecting Lady Birds by the Ton" by E. K. Carnes.

Mr. Wright recalled his experience in finding the grass for many acres

filled with ladybirds at an elevation in California of 3,800 to 4,000 feet, with masses congregated under logs and stones. This was, however, contrary to Dr. Lutz's experience not at the summit of the mountain.

MEETING OF APRIL 17.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., April 17, 1917, in the American Museum of Natural History, President Harry G. Barber in the chair with 27 members and two visitors present. The meeting was preceded by supper in the Mitla Restaurant.

A letter from Dr. L. O. Howard was read and discussed by Dr. Felt, Mr. Weiss, Mr. Dow and others; the Secretary was instructed to reply, pledging the support of the members in the steps advocated by Dr. Howard.

Mr. Davis read a letter from Henry Brown, sending greetings from France.

Mr. Davis then spoke of his experiences in "Collecting Insects along the James River." He was the guest last summer of Col. Wirt Robinson, in the latter's home at Wingina, Nelson Co., Va., where he found a wild country, with few roads but attractive paths through the woods. After giving some illustrations from other classes of the wild character of the country, Mr. Davis read extracts from his notes relating to the insects he had caught, mentioning especially his success in finding *Cicada* by following up big hornets *Sphecius speciosus* and digging out their concealed treasures; Col. Robinson's observation confirmed by himself that it is male *Papilio* and *Limenitis* that congregate at roadside drinking places; with some expressions borrowed from the colored people, as "news fly" for *Milesia virginiensis* suggested by its habit of remaining near one on the wing, but stationary as if it were trying by its buzzing to convey news of some kind. "Junie bug" was another expression, used for *Allorhina nitida*, a very common insect, by both white and colored; and both believed that no geometer larva must be dislodged from your garments while it is "measuring you for a new suit." Col. Robinson's Museum, with its copious illustration of local species was a great attraction, and it was Mr. Davis's good fortune to be able to add to it from his local captures, *Canthon viridis*, *Disonycha discoidea* and *Panagæus crucigerus*, the first being found on toad droppings. Mr. Davis also crossed the James River into Buckingham County, where the Hesperian, *Achalaris cellus* was part of the booty and the *Ceuthophilus gracilipes* found in Old Joe's Cave, another part, all reinforced by the beautiful river scenes, shown by photographs, amid which they were captured.

Leaving Col. Robinson's home, Mr. Davis traveled down the river to Richmond, Old Point Comfort, Fort Monroe, Cape Charles and thence home by rail, noting on the way that Providence Forge, Lanexa and Hampton looked like good entomological stations, especially the latter, on account of its trolley communications.

He collected in the flat country at Seven Pines near Richmond and at Fort Monroe, where by permission of the authorities, he got into a section of scrub

growth where he found such southern species as *Cicada reperta* by its song, located it with his glass and shot it with his sling-shot, also *Edessa bifida*, the latter identified by Mr. Barber.

Mr. Davis exhibited a large number of photographs and eight large boxes of insects he had caught on this trip, among which the following were especially noteworthy:

Sphenostethus taslei, found dead along wood road,

Atlantiscus davisi,

Danais archippus var. *fumatus* Hulst ♀.

Cicindela rufiventris, the common midsummer species in middle Virginia, *C. abdominalis*, *6-guttata* and *unipunctata*.

Libellula pulchella, flying naturally on three wings,

Argynnis diana ♂; occurs earlier in greater numbers,

Cicada (Tibicen) winnemana, *lyricen*, *sayi*, *engelhardti*, *aulates*,

Cychnus stenostomus, found in toad excrement,

Pterodentia flavipes, found dead and being carried by an ant.

Mr. Dow read a paper on "Insects mentioned in the Old Testament," that had not been covered by his previous papers, including ants, fleas, larvæ, moths, gnats and botflies, stating that in all fifteen different insects were referred to.

Mr. Shoemaker exhibited "Moths from Maine, Catskills and Sullivan Co.," caught either by Mr. Nicolay or himself.

Mr. Notman exhibited a "Collection of Adirondack Buprestidæ" containing a larger number of species, which had been identified, in part, with the aid of Colonel Casey's recent work, finding it essential for the recognition of some closely allied species. He called attention especially to the different habits, *Agrilus* only being found on foliage.

In the discussion of these papers, Mr. Nicolay pointed out that a specimen of *Buprestis sulcicollis* was included in Mr. Notman's catch; Mr. Angell asked more particulars of Lanexa, Va., which Mr. Davis said from its low-lying woods of oak and pine with the river and railroad nearby and its partly cultivated character, looked to be an ideal collecting ground. Mr. Leng also recalled that the late H. B. Bailey, of Newport News, had found it most productive.

Dr. Felt spoke briefly of his pleasure in being with his fellow members again and congratulated them on the Van Duzee Check List. He then called attention to the prospective installation of mobilization camps on a large scale and the need of entomological workers in connection with camp sanitation.

Mr. Leng read a letter of Samuel Henshaw to Mr. Edw. D. Harris, a statement regarding the type of *Omus Xanti* Lec. and gave some facts establishing its type locality "Fort Tejon" as in Tejon Pass in the northern part of Ventura or Santa Barbara Co., about fifty miles northeast of Santa Barbara and ten miles south of 35°.

MEETING OF MAY 1.

A regular meeting of the New York Entomological Society was held at 8:15 P. M., on May 1, 1917, in the American Museum of Natural History, President Harry G. Barber in the chair, with 13 members present.

The Treasurer reported a balance of \$1,519.33 on hand, subject, however, to an unpaid bill for the JOURNAL and to the amount due to him for advances against the cost of the Van Duzee Check List.

In reference to the latter amount, Mr. Davis said it was his desire to give it with some addition to the Society, provided a satisfactory arrangement were made with Farmers Loan and Trust Co. to preserve it as a permanent fund. He pointed out the growth of such permanent funds in the case of a sister Society and said he believed that once started, it would grow by gifts from members in our case. After a general discussion and expressions of appreciation of Mr. Davis's generosity from several members, the matter was held over for next meeting, at which a definite proposal from the Trust Co. could be presented.

Mr. Davis, in the absence of the members of the Outing Committee, reported briefly on the trip to Central Park, L. I., April 29, in which nine members participated and found many insects on willow bloom, though the day was too cold for best results.

Mr. Dow announced a field trip to Beaver Meadow on May 6.

The Secretary read a letter from Dr. L. O. Howard, chief of the U. S. Bureau of Entomology, asking members to report any facts regarding overwintering of insects or other factors likely to influence insect abundance.

Mr. Richardson read a paper on "Pulsatile Vessels in Aphididæ," illustrated by blackboard drawings, in which these vessels, situated in the legs between the femur and tibia, were described as probably connected with circulation. It was shown that their movements were more rapid than those of the dorsal heart and that their action commenced at birth and ceased with death, contrary to some statements in the books concerning analogous cases. The paper was discussed by the President and by Mr. Davis.

Dr. Bequaert exhibited the Museum collection of African wasps and read a paper thereon which will be printed elsewhere in full. After recounting his very friendly meeting with Messrs. Lang and Chapin in the Belgian Congo, and commenting on the extraordinary number of insects of all orders they had collected (60,182 was the exact number supplied by Dr. Lutz) he passed to a discussion of the faunal regions of Africa, illustrated by a map, and then to a comparison of its wasps with other regions, ending with particular details of some of the peculiar genera like *Synagris* and *Belonogaster*.

His remarks were discussed by Messrs. Davis, Richardson, Leng and Dr. Lutz, especially in regard to the faunal character of the Abyssinian Highlands. Dr. Bequaert having personally collected in the African mountains was able to testify to the sharp definition of their faunal zones at different altitudes, but insisted that nowhere was the arctic character of European mountains repeated, but always a flora and fauna peculiar to these African mountains predominated.

Mr. Davis exhibited *Tricrania sanguinipennis* found dead on April 22 at Watchogue, Staten Island, and commented on its distribution and habits; also *Danaïd archippus* found on the sidewalk at St. George, Staten Island, April 25 and flying in Brooklyn April 29, these dates being early for an insect known to migrate in the fall.

He also exhibited *Alypia octomaculata* found on April 28, saying that it was also unusual so early in the year, though common on grape vines in June and July. The subject of its being double brooded was discussed by him and Messrs. Olsen and Watson and, after the meeting closed, reference was made to Dr. Riley's article in *Am. Ent.*, II, 1870, p. 151.

Dr. Bequaert, after recalling his remarks at a previous meeting on the color varieties of *Eumenes*, showed from the specimens of African wasps previously exhibited, analogous variations in the great series of *Synagris cornuta*, as well as equally remarkable variations in the size of the jaw-like horns, which, however, always preserved their characteristic color. He said he was unable to trace any correlation between these variations and climatic or other conditions or to associate them in any way with protective coloration.